

Claims

1. A DNA sequence of SEQ ID NOS: 7, 8, 10, 11, 13, 14, 16, or 17 encoding a fusion protein optionally having an N-terminal methionine, said fusion protein comprising an antibody constant region or portion thereof attached to the N-terminus of a human OB protein, wherein said OB protein is selected from the group consisting of:
 - (a) the amino acid sequence 1-146 as set forth in SEQ ID NO: 6;
 - (b) the amino acid sequence 1-146 as set forth in SEQ ID NO: 6 having a lysine residue at position 35 and an isoleucine residue at position 74;
 - (c) the amino acid sequence of subparts (a) or (b) lacking a glutaminy residue at position 28; and
 - (d) the amino acid sequence of subparts (a), (b), or (c), wherein one or more amino acids selected from the group consisting of amino acids 32, 35, 50, 64, 68, 71, 74, 77, 89, 97, 100, 105, 106, 107, 108, 111, 118, 136, 138, 142 and 145 is substituted with the corresponding amino acid present in SEQ ID NO: 3 or a conserved amino acid.
2. The DNA sequence encoding a fusion protein of claim 1, wherein the process of producing the protein comprises expressing the DNA sequence in a transformed host cell and isolating the fusion protein.
3. A vector comprising the DNA sequence of claim 1.
4. A host cell transformed or transfected with the DNA sequence of claim 1.
5. The host cell of claim 4, wherein the host cell produces a protein for use in treating obesity.

6. The host cell of claim 5, wherein the protein is produced using the DNA sequence of claim 1.
7. The host cell of claim 4, wherein the host cell produces a protein for use in increasing insulin sensitivity.
8. The host cell of claim 7, wherein the protein is produced using the DNA sequence of claim 1.